

NEW NORTH AMERICAN *ELATERIDÆ* AND
SCARABÆIDÆ.

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Limonius venablesi sp. nov.

Finely pubescent, slightly shining. Form moderately elongate for this genus, sides subparallel for the greater part of the length. Black, with a slightly greenish tint, the tibiæ and tarsi picescent, knees testaceous, elytra testaceous, each with two black spots, the anterior of which lies slightly in front of the middle and is nearly circular in outline, while the posterior is a little postmedian in position and elliptical, these markings being about equidistant from the side margin and the suture. Head with strong frontal concavity, the margin weak and obsolete at middle, only slightly reflexed and scarcely emarginate the punctuation strong, deep, and close. Antennæ (male) rather weakly serrate, the second and third joints subequal and together about as long or a little longer than the fourth which, in turn, does not differ much in length from those succeeding. Prothorax punctured similarly to the head but more closely at the sides, where there is a tendency to confluence, width equal to about five-sixths of the length, sides (in the male) nearly parallel except at the extreme base and apex, front angles rather prominent anteriorly and deflexed, hind angles rather long, a little divergent and blunt or rounded at the tips, indistinctly unicarinate. Scutellum finely punctured. Elytra subparallel at sides to about the apical third, thence rounding to the apices which are simple. Surface with distinct moderately impressed striæ which are marked with coarse approximate punctures, the interspaces slightly convex with close, irregular, more or less confluent but rather fine punctuation. Under side of body closely and finely punctured, the prothoracic flanks more roughly than the trunk and abdomen. Length, 8.50 mm.

The type is a male, collected at Vernon, B. C., May 14, by Mr. E. P. Venable, after whom it is named. I have had it in my collection for three or four years. A female from the same source differs in having the prothorax more narrowed anteriorly and the antennæ a trifle shorter. In the type, the antennæ pass the apices of the prothoracic hind angles by the length of two joints. With the British Columbian specimens, I associate, as cotypes, three examples taken by Mr. W. M. Mann at Pullman, Wash., though two of these latter are much larger and have relatively somewhat shorter antennæ. The largest of the Pullman specimens is about 14.60 mm. long, but the smallest scarcely exceeds the measurements of the type.

If this species be assigned a place in the table of Candèze (*Monographie des Elaterides*, III, p. 579) it would go into the second section in which the prosternal sutures are not deeply excavated anteriorly, and by the maculate elytra and carinate prothoracic hind angles would go next to *L. stigma* Hbst. However, it is not like any of the described North American species and may be recognized at sight by its size and coloration.

Aphodius iowensis sp. nov.

Oblong, moderately elongate, more parallel and less convex than usual, rufopiceous, the sides of the head and of the prothorax paler, elytra and legs reddish-castaneous, surface strongly shining and polished. Antennæ paler, the stem a little darker than the club. Head moderately convex, the three tubercles low and broad but easily distinguishable, genæ prominent but obtuse. The portion behind the row of tubercles is sparsely and extremely minutely punctured, somewhat more closely and distinctly near the sides. Clypeus with a shallow rounded anterior emargination, sides strongly divergent posteriorly, angles broadly rounded, margin narrowly reflexed, surface with fine but well separated and rather sparse granules which fade out in the neighborhood of the frontal suture. Prothorax about one and a half times as broad as long, very little narrowed anteriorly, the sides scarcely arcuate but broadly explanate, all the angles obtuse and rounded, basal marginal line showing faintly on each side of the middle; disk strongly shining, quite impunctate at middle, sides irregularly marked with deep punctures, sparse and large on the submedian area but becoming smaller and more crowded near the margin and cribrate in the impression anterior to the hind angles. Elytra at base a little narrower than the prothorax, only slightly broader behind, humeri obtuse, surface strongly shining, finely and sharply striate, striæ with regular, round, rather close, sharp punctures, interspaces flat and smooth. Body beneath with a fine alutaceous sculpture and punctate as well, the punctures distinct but rather distant over most of the ventral surface, becoming smaller and closer on the sternal side pieces. Mesosternum bluntly carinate between the coxæ. Anterior tibiæ very strongly tridentate and distinctly crenulate above the upper tooth, the spur stout and curved, first tarsal joint shorter than the second. Middle tibiæ with the spurs dissimilar, the major spur being slender and sharp, about twice as long as the minor, this latter slightly bent and chisel-shaped at tip. Hind tibiæ fimbriate at apex with unequal spinules, first tarsal joint shorter than the next three. All of the femora are sparsely punctate and hairy. Length 7.25 mm.

Collected at Lake Okoboji, Iowa, by Mr. A. O. Thomas, who has kindly given me the specimen.

This is a true *Aphodius* with short scutellum, and belongs in Horn's group I-a. From those described, it may be known by the tuberculate front, feebly emarginate clypeus, impunctate elytral intervals and punctate hind femora, this combination of characters.

not occurring in any other North American species in that division of the genus. It is of special interest on account of its relation to this small assemblage of rare forms with explanate pronotal sides.

Aphodius columbiensis sp. nov.

Form rather stout, strongly convex, broader posteriorly, blackish-piceous, opaque, legs reddish-piceous, antennae testaceous, club sooty. Head without tubercles, finely and sharply but not closely punctured, clypeus emarginate at middle, angles distinct but rounded, sides diverging regularly with scarcely any arcuation to the rounded, moderately prominent genae, margin feebly reflexed, clypeal punctation fine and rather sparse. Prothorax with the sides parallel posteriorly, arcuate for a short distance anteriorly, all the angles rounded, surface alutaceous and having besides a double system of punctuation, the larger punctures fairly evenly disposed (but allowing some smoother areas in the discal region and an impunctate median line) and ordinarily separated by approximately their own diameters, the fine punctures irregularly scattered among the others. Basal marginal line distinct. Elytra at base a little narrower than the prothorax, becoming broader behind the middle, humeri dentiform, disk very regularly but finely striate, the striae with well-marked distant punctures giving a catenate appearance to the grooves, interspaces flat, strongly alutaceous and opaque but impunctate. Body beneath rather coarsely and sparsely punctate on the meso and metasternal side-pieces, the mesosternum not carinate, abdominal punctuation indistinct, replaced by a longitudinal rugosity of the segments. Posterior and middle femora strongly but not densely punctate. Length, 5.25 mm.

Collected at Vernon, B. C., by Mr. E. P. Venables, who gave me the type specimen.

This also is a genuine *Aphodius*, belonging to Horn's group *H*, in which it approaches *A. opacus* Lec., but is at once distinguishable by the elytral striae being distinctly punctured. The fore tibiae are strongly tridentate, crenulate above the upper tooth, the edges fimbriate with yellow hairs. Both spurs of the middle tibiae are sharply pointed at their apices and of normal form, differing only in size, those of the hind tibiae are very long, slender and sharp. The basal joint of the hind tarsus is about as long as the next three. The alutaceous sculpture appears to extend to all parts of the body, even showing on the legs.

Anomala camancha sp. nov.

Size large. Surface subopaque. Form subparallel, recalling *Cyclocephala*. Color yellowish testaceous, head, tibiae, and tarsi darker, reflexed edge of clypeus, prothoracic marginal bead, outer edging of fore tibiae, and most of the spines and ridges on the middle and hind pairs piceous or blackish in somewhat varying degree,

eyes black. Head of normal size, front rather coarsely, densely, and more or less confluent but not deeply punctured, the vertex much less closely. Clypeus punctured similarly to the front but a little less strongly, the front edge nearly straight, angles broadly and evenly rounded, sides subparallel or slightly convergent posteriorly for about the basal half of the length, margin entire, somewhat strongly reflexed, frontal suture deeply impressed and about straight, Antennal club about equal in length to all of the remaining joints. Pronotum with an antemedian, shallow, dark-colored fovea each side, marginal bead strong all the way around, basal lobe barely visibly emarginate or sinuate at middle, the pronotal disk punctured, rather sparsely over most of the surface but more closely at sides, the punctuation fine, the intervening spaces alutaceous. Scutellum punctured similarly to the pronotum. Elytra a little more shining than the prothorax, distinctly and rather strongly striate, the striae punctured weakly on the disk, a little more strongly at the sides and near the base, the intervals of the dorsum distinctly alternating in height and breadth, the broader ones lower than the others and rather sharply punctured. The interval just external to the sutural stria is the widest and has the punctures arranged in a rather confused double series, while on the other two flat discal intervals the series is single. The intervals external to these are not punctured, except with the fine alutaceous marking that gives the appearance of subopacity to the elytra. Propygidium punctured, with a distinct tendency to transverse rugosity, pygidial sculpture finer and more rugose. Body beneath strongly hairy on the thoracic sternites but less so on the abdomen and femora, metasternum distinctly and closely but not very deeply punctured, abdominal segments strongly shining and sparsely punctate. Legs of moderate thickness, the posterior tibiae not dilated, the front pair bidentate, none of the claws cleft at tip, but those of the anterior tarsus are somewhat dissimilar, the inner one being a little twisted, suddenly bent near the base and with a marked thickening just external to this bend. The two claws of the middle tarsus are about alike, except that the inner is a trifle more slender, those of the hind tarsus are similar to the middle ones. Length. 13.50 to 16.50 mm.

Described from six specimens kindly given me by Mrs. Lucy Brant Meade, who collected them Aug. 9, on Capitan Mt., New Mexico.

By the non-protuberant mesosternum and nearly simple (not cleft) claws, this should go into the sub-genus *Rhombonyx* and belongs near *A. cavifrons* Lec. and *A. carinifrons* Bates, differing from both in the impressed (instead of carinate) frontal suture. It is also larger than either of the two species noted and differs from both in several minor characters which may be gathered from the description.

Anomala apacheana sp. nov.

Similar in form, size, color and luster to *A. camancha*, but is somewhat more shining and differs in the following particulars. Clypeus narrower and longer in

proportion, much more broadly rounded so that the arcuation of the angles involves the front border to the extent of loss of the straightness of the anterior margin. The clypeal disk is much less strongly punctured and the concavity is more pronounced. Frontal suture strongly carinate, front and vertex less punctured than in *A. camancha*. Prothorax with the sides a little divergent, the posterior angles slightly everted, while in *A. camancha* the sides converge a little posteriorly and the angles are not everted. Pronotal discal punctuation finer, and more scattered. Elytral strial punctuation a little more pronounced than in *A. camancha*, but that of the intervals much less so, the broadest interspace, next to the sutural stria, having a rather irregular single series only. Pygidium finely and very sparsely punctate. Claw structure almost identical with the preceding species. Length 12.25 mm.

Described from a single specimen, collected by myself, July 9, at El Paso, Texas.

This, too, is a *Rhombonyx*, differing at once from *A. camancha* in the cariniform frontal suture, agreeing in this character with *A. carinifrons* Bates and *A. cavifrons* Lec. From the former, it may be told by the thoracic punctuation ("sat dense et fortius" in *A. carinifrons*), the single punctate series on the subsutural interval and the distinct though not very strong dilatation of the major anterior tarsal claw. From *cavifrons*, it separates by the larger size, the punctate elytral intervals and the shape of the prothorax.

A GIANT COCCID FROM GUATEMALA.

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The Coccidæ are usually described in our entomological textbooks as "small" or "minute" insects, and this is certainly true of the species of temperate regions. In the tropics, however, where the family is most abundantly represented, there are several large forms which make their congeners look like pygmies. For example, the adult female of *Hemilceanium theobromæ* Newstead, one of the species found on cacao in Cameroon, West Africa, is 13–15 mm. long and 12–13 mm. wide.¹

¹ Newstead, On a Collection of Coccidæ and Other Insects Affecting Some Cultivated and Wild Plants in Java and in Tropical Western Africa. Journ. Econ. Biol. III, No. 2, 1908, pp. 33–42, 2 pls.